WHAT IS CLAIMED IS:

1.   An image processing apparatus comprising:

storage means for storing a plurality of electronic data as target comparison images;

5   input means for inputting a reference comparison image obtained from a printed material;

grayscale feature amount extraction means for extracting a grayscale feature amount of the reference comparison image;

10   retrieval means for retrieving a target comparison image corresponding to the reference comparison image from said storage means by using the grayscale feature amount extracted by said grayscale feature amount extraction means; and

15   processing means for extracting the image retrieved by said retrieval means from said storage means and processing the extracted image.

2.   The apparatus according to claim 1, wherein the grayscale feature amount comprises of one or an

20   arbitrary combination of a plurality of types of a brightness feature amount, or a texture feature amount, or a shape feature amount of the reference comparison image.

3.   The apparatus according to claim 1, wherein said

25   retrieval means compares a grayscale feature amount of the reference comparison image and a grayscale feature amount of the target comparison image, and outputs a

similar target comparison image as a retrieval result.

4.   The apparatus according to claim 1, further comprising color feature amount extraction means for extracting a color feature amount of a color of the
5   reference comparison image,

        wherein said retrieval means retrieves the target comparison image corresponding to the reference comparison image from said storage means on the basis of the grayscale feature amount of the reference
10   comparison image and the color feature amount of the reference comparison image.

5.   The apparatus according to claim 4, wherein the color feature amount includes at least one of a mode color and an average color in the reference comparison
15   image.

6.   The apparatus according to claim 4, further comprising determination means for determining whether to retrieve the reference comparison image on the basis of color information,
20   wherein when said determination means determines to retrieve the reference comparison image on the basis of color information, said color feature amount extraction means extracts the color feature amount of the reference comparison image, and said retrieval
25   means retrieves the target comparison image corresponding to the reference comparison image from said storage means on the basis of the extracted color

feature amount of the reference comparison image, and

when said determination means determines not to retrieve the reference comparison image on the basis of color information, said grayscale feature amount

5 extraction means extracts the grayscale feature amount of the reference comparison image, and said retrieval means retrieves the target comparison image corresponding to the reference comparison image from said storage means on the basis of the extracted

10 grayscale feature amount of the reference comparison image.

7. The apparatus according to claim 1, further comprising:

display means for displaying a retrieval result

15 by said retrieval means; and

selection means for, when said display means displays a plurality of target comparison images as retrieval results by said retrieval means, selecting a desired image from the plurality of target comparison

20 images,

wherein said processing means extracts the image selected by said selection means from said storage means, and executes a process for the extracted image.

8. The apparatus according to claim 1, further

25 comprising designation means for designating a type of process for the image retrieved by said retrieval means,

wherein said processing means extracts the retrieved image and executes the designated process on the basis of the type of process designated by said designation means.

5   9.   The apparatus according to claim 8, wherein said designation means can designate at least one process from printing, distribution, storage, and editing.

10.   The apparatus according to claim 1, further comprising segmentation means for segmenting the

10   reference comparison image into a plurality of regions on the basis of an attribute,

wherein said grayscale feature amount extraction means extracts the grayscale feature amount from a region having a predetermined attribute among the

15   plurality of regions segmented by said segmentation means.

11.   The apparatus according to claim 4, further comprising segmentation means for segmenting the reference comparison image into a plurality of regions

20   on the basis of an attribute,

wherein said grayscale feature amount extraction means extracts the grayscale feature amount from a region having a first attribute among the plurality of regions segmented by said segmentation means, and

25   said color feature amount extraction means extracts the color feature amount from a region having a second attribute among the plurality of regions

segmented by said segmentation means.

12. The apparatus according to claim 1, further comprising:

text feature amount extraction means for
5   extracting a text feature amount of a text image in the reference comparison image; and

segmentation means for segmenting the reference comparison image into a plurality of regions on the basis of an attribute,
10   wherein said grayscale feature amount extraction means extracts the grayscale feature amount from a region having a first attribute among the plurality of regions segmented by said segmentation means,

said text feature amount extraction means
15   extracts the text feature amount from a region having a text attribute among the plurality of regions segmented by said segmentation means, and

said retrieval means retrieves the target comparison image corresponding to the reference
20   comparison image from said storage means by using the grayscale feature amount extracted by said grayscale feature amount extraction means and the text feature amount extracted by said text feature amount extraction means.

25   13. The apparatus according to claim 1, further comprising:

color feature amount extraction means for

extracting a color feature amount of a color of an image;

text feature amount extraction means for extracting a text feature amount of a text image;

5 segmentation means for segmenting the reference comparison image into a plurality of regions on the basis of an attribute; and

determination means for determining whether to retrieve a region having a predetermined attribute

10 among the regions segmented by said segmentation means on the basis of color information,

wherein said grayscale feature amount extraction means extracts the grayscale feature amount from a region determined by said determination means not to

15 undergo retrieval based on the color information,

said color feature amount extraction means extracts the color feature amount from a region determined by said determination means to undergo retrieval based on the color information,

20 said text feature amount extraction means extracts the text feature amount from a region having a text attribute among the regions segmented by said segmentation means, and

said retrieval means retrieves the target

25 comparison image corresponding to the reference comparison image from said storage means on the basis of the extracted grayscale feature amount, the

extracted color feature amount, and the extracted text feature amount.

14. The apparatus according to claim 13, wherein the region having the predetermined attribute includes an
5 image block, and the region having the text attribute includes a text block.

15. The apparatus according to claim 1, further comprising registration means for extracting a feature amount from a registration image and registering the
10 feature amount as the reference comparison image in said storage means.

16. The apparatus according to claim 15, wherein the feature amount extracted by said registration means includes the grayscale feature amount.

15 17. The apparatus according to claim 15, further comprising segmentation means for segmenting the registration image into a plurality of regions on the basis of an attribute,

    wherein said registration means extracts and
20 registers a feature amount corresponding to an attribute of the region segmented by said segmentation means.

18. An image processing method comprising:

    an input step of inputting a reference comparison
25 image obtained from a printed material;

    a grayscale feature amount extraction step of extracting a grayscale feature amount of the reference

comparison image;

a retrieval step of retrieving a target comparison image corresponding to the reference comparison image from a plurality of electronic data

5   stored as target comparison images in a storage medium, by using the grayscale feature amount extracted in the grayscale feature amount extraction step; and

a process step of extracting the image retrieved in the retrieval step from the storage medium and

10   processing the extracted image.

19.   A program comprising:

a program code for an input step of inputting a reference comparison image obtained from a printed material;

15   a program code for a grayscale feature amount extraction step of extracting a grayscale feature amount of the reference comparison image;

a program code for a retrieval step of retrieving a target comparison image corresponding to the

20   reference comparison image from a plurality of electronic data stored as target comparison images in a storage medium, by using the grayscale feature amount extracted in the grayscale feature amount extraction step; and

25   a program code for a process step of extracting the image retrieved in the retrieval step from the storage medium and processing the extracted image.